

Introduction

As a new system progresses to fielding and then advances toward steady-state sustainment, logistics support goes through a series of changes. The following list describes the typical progression of a system.

- Initial spares are depleted and replacements must be obtained from other sources.
- Design fixes are implemented to correct defects that may show up after testing.
- Technical manuals are updated to correct early publication flaws and to keep pace with hardware and software changes.
- Warranty provisions change from the initial focus on workmanship and material defects to dealing with system failures as a result of design defects.
- As more systems are fielded, military technicians steadily replace contractor technicians in resolving maintenance problems, with less help from the original equipment manufacturer (OEM).
- Sample data collection, which is used early to document fielding and performance problems so fixes can be developed, is slowly phased out. This forces the program manager (PM) to rely on less robust, intra-Service, and joint data collection programs.

When all these changes occur, do the results of good planning kick in, providing a smooth transition to steady-state sustainment? The answer is that more than likely, users and maintainers will encounter a bumpy road during this transition because support plans are not realistically resourced and do not include enough user/maintainer input.

The Tactical Quiet Generator

In March 2000, MAJ Kim Daub, a former Maintenance Officer in the 101st Airborne Division (Air Assault), completed her master's thesis, *Logistics Support Requirements: A Case Analysis of the Tactical Quiet Generator*, at the Naval Postgraduate School. Daub examined an innovative, well-managed program from initial fielding to steady-state sustainment to see how it fared. She specifically chose

TRANSITIONING FROM FIELDING TO STEADY-STATE SUSTAINMENT

COL Michael W. Boudreau (USA, Ret.)

a well-run program that had received Army Materiel Command and DOD awards in 1995 and 1996. Many of the "bumps in the road" that Daub found occur in other programs as well—spanning commodity lines and all Services. Read on to see what she learned—it may sound familiar.

When a new system is approved for production and fielding, there are always loose ends needing to be tied up—there are no perfect programs. Let's look at new equipment fielding from Daub's perspective, that is, as viewed by a field maintenance officer. Note that the Tactical Quiet Generator is still being fielded, and the information below is not intended to reflect the year 2000 program status. This discussion is about *early fielding* and the problems unique to this segment of the acquisition life cycle.

Initial Spares. The initial spares were not the right mix of parts, and the supply system didn't provide them on time. In some cases, wrong parts were stocked because of intricacies in the provisioning model—the Selected Essential Item Stock for Availability Method. Some of the needed parts were not stocked because supply item managers waited until demand for the parts occurred before they were ordered from a contractor. Additionally, spare parts were stocked in insufficient quantities to meet demands during lengthy warranty response times.

Design Fixes. Because of errors in failure prediction rates, some of the parts stocked at the installation level were not

used and were eventually turned in as excess. What happened? It's likely that testing failures were corrected before fielding, but the parts provisioning section was unable to keep up with the changes. As a result of this timing "glitch," some parts were bought and stocked unnecessarily and wastefully.

Warranty Provisions. Warranty timeframes were inconsistent with unit operational tempo (OPTEMPO). In some instances, warranties were expended in only 3 months because OPTEMPO was more intense than planned. After the warranty expired, support came exclusively from the supply system. However, 3 months is too short a time to expect resources to be in place for satisfactory supply support.

Readiness. When warranties were used, they didn't mesh with the needs of the customer. For example, the contractor had 45 days to analyze a component failure and an additional 60 days to complete the repair and return the component to the supply system. At the same time, spares were insufficiently stocked, negatively impacting readiness. Warranty benefit to the using unit was about zero.

Duty Cycles. Equipment duty cycles and system usage were not consistent with the way equipment was designed and negatively impacted readiness. For example, electrical loads placed on generators during field use were often suboptimal and resulted in poor equipment reliability. Unique to generators, you say? It's easy to find examples in other commodity

areas (the M1 Abrams or Family of Medium Tactical Vehicles (FMTV) for instance) where common use (not abuse) resulted in less than optimal reliability or another performance shortfall.

We could argue about the facts of this case. For example, you may want to disagree with some of the things that Daub found or suggest that program constraints forced trade-offs. As a former PM, I tend to make the same arguments. But, I guarantee there was at least one field maintenance officer who didn't think that support to the Tactical Quiet Generator was up to expectations, and I'll bet there were a lot more customers who felt the same way.

Suggestions

The following paragraphs describe some of Daub's suggestions for achieving a smooth transition from fielding to steady-state sustainment. I have taken the liberty of presenting her suggestions in general terms that can be applied across a broad range of programs.

Duty Cycle. I'm starting with equipment duty cycle because help in this area must come from the user community. When equipment passes testing but does not perform well in the hands of soldiers, it's probably the result of a communications failure between the users and the PM. The reasons for this may be because the Operational Requirements Document has not adequately described the operational requirements, the PM and the user representative are not "in synch," user injuries are not involved in the process, or testing is not realistic. Whatever the reason, when the voice of the operator or maintainer is not loud and clear, the Army Training and Doctrine Command must be the unwavering advocate for the ultimate customer—the soldier.

Contractor Logistics Support. Contractors can really be of help while troops are getting used to operating and supporting new equipment. They can teach, mentor, and troubleshoot. They can ensure robust information flows back to OEMs and PM offices by telling contractor and PM teams what's wrong with new equipment and what needs correction. Contractor representatives are usually very

focused, seasoned technicians who are worth their cost. They're needed to assist in reaching steady-state sustainment, and their presence should be planned and budgeted.

I've had very good support from logistics assistance representatives (LARs) and am not criticizing them. However, my experience is that LARs already have too much on their plate and simply do not have enough time to devote to transition issues after fielding. Newly fielded systems require some additional "care and feeding," which is best provided by contractor reps.

Prime Vendor Support. As new systems progress through the changes mentioned at the beginning of this article, users and maintainers could really benefit from more focused parts management. Some contractors are willing to handle spare parts management, and we should be willing to let them do it. They can operate more flexibly than the government. If the production line is "hot," they can respond quickly to crises. Supply chain management techniques can be brought to bear on supply responsiveness through innovative contract arrangements. We should incentivize contractors to achieve rapid response times.

Innovative Warranties. In the past, we often bought assurance warranties and, all too frequently, squandered precious resources on warranties that did not meet customer needs. Now that warranty policy has been modified, PMs should respond with creative, value-added warranties that guarantee contractor performance. There are useful warranty forms that encourage contractors to improve reliability or availability and reduce support costs. We don't need expensive warranties that absorb precious maintenance man-hours, are not executable in field situations, or don't support readiness goals. We do need warranties (that are probably expensive, but cost-effective) that are value-added from the customer's perspective and are well thought out to meet customer needs, not the supply system's needs.

Maybe responsive warranties fall into the "too hard" category. If we can't figure out how to write warranties that are

responsive to customer readiness needs, then at least we need to write them in such a way that they don't impede the customer. For example, we might choose only to exercise warranties at the depot level, where, once repaired, the item is returned to the supply system. In fact, reliability incentive warranties *must* be exercised only at depot level.

Combined Support Packages. PMs and contractors today are entering into innovative arrangements that tie together contractor logistics support, prime vendor support (using supply chain management), and innovative warranties. The customer will thank them. Maybe, through integrated product teams, customers themselves (operators and maintainers) have helped develop the more innovative solutions. Or maybe the government has taken partnering seriously and is listening to the innovative suggestions of its contractors.

Conclusion

So, what's the price of innovative field support? I can't prove it, but maybe there isn't an additional cost. In the early 1980s, car manufacturers thought that producing high-quality automobiles was simply too expensive, so they cut back on quality. But, by approaching the job differently, manufacturers discovered that high quality didn't cost more. In effect, quality was "free." Good support might be free, too, particularly when viewed through the lens of total ownership cost. Think about it!

COL MICHAEL W. BOUDREAU (USA, Ret.) is a Senior Lecturer at the Naval Postgraduate School. While on Active duty, he was the PM, FMTV. Boudreau holds a bachelor's degree in mechanical engineering and an M.B.A. from Santa Clara University, California.
